probably an epileptic fit. Subsequently I found that there was a family history of epilepsy. The patient's condition on Jan. 2nd was as follows:—At 10 A.M. I found him in bed watched by two natives. The face was not flushed; the pulse was 80 and normal; the respiration was 20 and normal; the temperature was normal. The pupils were dilated and did not react to light. The conjunctival reflexes were absent, there were no knee-jerks or ankle-clonus; in fact, there were no reflexes at all. I gave two minims of croton oil on the tongue. On pouring water into the mouth and holding the nose it took some time before it passed into the stomach; there was no coughing with this. At midnight the pulse was 74, the respiration was 16, and the temperature normal. The pupils did not react to light. A short time before I arrived he was trying to sit up in bed and rolling himself from side to side; he had to be prevented from falling on the floor. While this was going on there was tonic flexion of the wrists, and the fingers and thumb on both sides were tonically flexed into the shape of a cone and kept perfectly straight; at the same time flexion and extension of the arm and forearm were being performed, the tips of the fingers impinging on to the ensiform cartilage each time. These movements lasted for six hours. During the night his mouth was moistened with brandy-and-water. Urine was passed involuntarily into the bed. On the 3rd, at 6 A.M., he was less restless and ultimately fell into a deep sleep, all movements having stopped. At 3 P.M. the pupils reacted to light sluggishly; the pulse was 74, the respiration was 16, and the temperature was normal. The urine was again passed involuntarily into the bed. The bowels had not been opened. The patient was unconscious, but moved his hands very slowly to any place that was deeply pricked. Knee-jerks and ankle-clonus were just perceptible. On the 4th, at 8 A.M., the patient became slightly conscious; on speaking loudly to him he appeared to understand in a dull sort of way. The bowels had not been opened; he was able to swallow. A five-grain pill of calomel with colocynth and a quarter-grain pill of podophyllin were prescribed. The pupils reacted to light less sluggishly. At 6 P.M. the bowels were opened. He took slops well; he was more conscious, but did not remember familiar faces or recognise that he was in his own room; all reflexes were more marked; he was still unable to localise irritation quickly. For the next few days he improved. On the 6th it was noted that the left pupil was widely dilated and it remained so till Jan. 21st, the right one being normal. From this day till Feb. 4th both pupils were contracted; after this date the left one again became widely dilated. Purges were freely given. There has never been any localised pain. On Feb. 28th the patient was again visited; the reflexes were all normal. The last note taken (May 13th) states: "Patient quite well; he has had no more fits."

Warri, Niger Coast Protectorate, West Africa.

NOTE ON THE SPREAD OF INFECTIOUS DISEASE BY VAGRANTS.

BY JAMES NIVEN, M.A., M.B. CANTAB., M.A. ABERD.,
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I SHOULD like to express my views on the question of dealing with vagrants, as I consider that the proposals put forward and carried at the recent conference convened by the London County Council are, in the main, inadequate and impracticable. I do so with considerable hesitation, as I am aware that the objections which I urge against them do, to some extent, apply to the plan which I venture to propose. But I have satisfied myself by conversation with those in charge at lodging-houses and unions that the proposals which I put forward, if they could be made law, would probably be workable. It is necessary to premise that an infringement of the personal liberty of the tramp or of those who frequent common lodging-houses or lodging-houses of a similar stamp does not need to be regarded as a general encroachment on individual rights. The nomad part of the community is, by virtue of the character of their mode of life, however honest most of them may be, specially liable to infectious disease, more particularly to small-pox, and is also specially liable to spread the disease when contracted. Like medical men, nurses, and attendants in a small-pox hospital, therefore, they ought to be made to take special precautions on behalf of the community.

In dealing with the question of the diffusion of infectious disease by tramps it is necessary to take into account the character of these people. Many of them are inaccessible to the terrors of the law, and to attempt compulsory measures with individual tramps could only result in failure. To take small-pox, for instance, it would be impossible to obtain the vaccination of 400 men in a common lodging-house on the appearance of small-pox. It would require a body of police to enforce the proceeding, and the enforcement would give rise to scenes that would soon render its abandonment necessary. Other effects would result. Tramps would avoid common lodging-houses and seek out other places of shelter; or else it would be to the interest of a tramp to hide his disease until the other inmates of the lodging-house had been made aware of it, so as to give them an opportunity to decamp. It would produce an increased flow of tramps into houses other than common lodging-houses, and probably other unforeseen evasions would take place. Detention for a fortnight is a perfectly practicable thing so far as the tramp is concerned, but it would entail maintaining those detained. I have calculated that one detention of 400 men would cost in that time £280. The tramp himself is but little amenable to legal measures. The fear of being sent to prison would often not be any inducement for him to submit. There is, I should say, but one way to secure the vaccination of all tramps, and thus to prevent them being the means of spreading small-pox, and that is to get a law passed putting it in the power of the Local Government Board to secure the recent vaccination of all persons seeking shelter in registered lodging-houses or in the union. For that purpose it would be necessary to make it impossible for tramps to live unless they were protected by recent vaccination. They would not be permitted to enter any common or other lodging-house or union unless producing a certificate of recent vaccination signed by a public vaccinator or medical officer of a union and exhibiting the marks of revaccination. In the case of unions as an alternative to the production of a certificate the medical officer would where requisite revaccinate on admission. By recent vaccination would be meant vaccination within ten years.

It would not be necessary that such vaccination should be successful, but it would be necessary either that such vaccination had been successful, or that if unsuccessful its want of success was due to previous successful revaccination with visible marks. In order to mark out recent vaccinations the marks should be in a fixed figure, such as a straight line, which could be varied from decade to decade. To secure the observance of the law a heavy penalty would be imposed on any lodging-house keeper or union officer who admitted into his lodging-house or union any person who failed to comply with the requirements of the law. In this way only would it be possible to secure the enforcement of such a law. *The responsibility of seeing it carried into effect would be laid entirely on some responsible person, whose interest it would be made to look sharply after its observance.* It is, perhaps, necessary explicitly to insist that any proposals which do not embrace registered lodging-houses other than common lodging-houses would be liable to give rise, if carried into effect, to consequences the reverse of those aimed at.

Amongst other questions it is desirable to know whether a tramp has been exposed to infectious disease, whether small-pox or other. For that purpose every tramp would carry a book in which would be inscribed the date of his leaving his last shelter in this form:—Left ..... lodging-house in (Manchester). No infectious disease. Signed, June 5th, 1895. The date, place, and name of lodging-house to be in the same handwriting, which would be that of the manager of the lodging-house, who would sign the book. If an infectious disease had occurred in the lodging-house or union during the stay of the tramp there the manager or officer would sign the book over the words "No infectious disease," and in the place reserved for his name he would put the name of the infectious disease to which the tramp had been exposed. The objection might be urged against this plan that it would take no account of the non-tramp element—of people, that is, temporarily obliged to use a common or other lodging-house who had not previously been at any common lodging-house. Clearly it would be necessary to take account of those. In such a case the person desiring to go to a lodging-house would procure a book, and during the time that he lived in a common or other registered lodging-house or union would be under the same regulations as a vagrant. If not previously

revaccinated within ten years he would require to be vaccinated and to produce a certificate. He would also be required to state his last place of residence and whether he had recently been exposed to infection, under a penalty in case of false information. To revert to the book, the manager of the lodging-house or union officer would in all cases keep a copy of the entries made in the tramp's book and also in the books of persons other than tramps staying at the lodging-house or union; so that, in case of the loss of the book, the statements of the person admitted into a lodging-house might be confirmed or otherwise. In such a case, however, special precautions would require to be taken. The loss of the book would involve detention as well as rigorous disinfection and, in times of danger, isolation. Loss of the vaccination certificate would entail the necessity of revaccination. A penalty would be imposed on any person making a false entry in the tramp's book or for alteration of his own register of the entries in the tramp's book. As regards disinfection of clothing, this would in general be unnecessary in the case of persons who had not been in intimate contact with the person actually attacked by the disease. There is very little evidence of disease being frequently conveyed in that manner, and though as a measure of added security it is well to carry out such measures of disinfection, especially where there has been intimate exposure to infection, it would scarcely be possible systematically to disinfect the clothing of the inmates of lodging-houses. It is by no means one of the most urgent considerations. Where it could be established that a limited number of the inmates of a lodging-house had been intimately exposed to infection their clothing might be disinfected by being boiled or it might be taken (as it is) to the public disinfecting station and disinfected by steam. At the Manchester union the clothing of all tramps admitted is disinfected in a hot air chamber.

One other matter requires careful attention. So far as I can judge ignorance of the nature of slight small-pox is responsible for more damage than the movement of vagrants. Clear instructions for the recognition of slight cases of small-pox should be widely distributed, and especially all lodging-house keepers should be specially instructed in regard to the disease. No amount of trouble can be considered wasted which aims at extending the recognition of this disease. It is a cardinal difficulty both in lodging-houses and in private dwellings, perhaps more so in the latter than in the former. The frequent mistakes between small-pox and chicken-pox need not be made by attending to these rules: 1. Adults rarely have chicken-pox. If two adults appear to have chicken-pox in one house the medical attendant should suspect small-pox. 2. Properly vaccinated children under seven years of age very rarely have small-pox. It is curious how people forget to apply this crucial test by looking for the vaccination marks. 3. With few exceptions children attacked with chicken-pox experience no initial sense of illness. With small-pox they almost always have well-marked illness. 4. The distribution of the eruption is different. In slight small-pox the eruption is almost always on the face and limbs, sparing the abdomen and front of the chest. In chicken-pox there is generally a large number of pocks on the front of the chest and abdomen. 5. The eruptions are different in character. To mention no other points of difference the eruption of small-pox is tolerably uniform in size and round in shape. The eruption of chicken-pox is very variable in size, and many of the pocks, on the body especially, are of an oval shape. 6. The eruption of chicken-pox is itchy in a great many instances; that of small-pox is, at first, not so. Only long experience enables one to tell at a glance which disease one has probably to deal with, but with due care no one need go wrong in arriving at a differential diagnosis.

Manchester.

THE French Minister of the Interior has awarded a gold medal to Dr. Soulié of Algiers on account of his devotion to the sufferers in the recent epidemics.

THE SHEFFIELD PUBLIC HOSPITAL.—At the annual meeting of the governors of the Sheffield Public Hospital on July 23rd an appeal was made for funds in order to rebuild the institution. The Duke of Norfolk, who was in the chair, and who had himself given £5000 towards the undertaking, announced the bequest of £6000 by the late Mr. Bernard Wake, but said that £50,000 were still required. Subscriptions to the amount of £17,000 were promised at the meeting.

"THE HYDERABAD CHLOROFORM COMMISSION."

THE DANGER SIGNAL OF THE CHLOROFORMIST.

BY ARTHUR H. WARD, F.R.C.S. ENG.,
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THE recent paper and discussion on the chloroform question at the Royal Medical and Chirurgical Society, were, from the practical chloroformist's point of view, unconvincing. The final proof of the action or non-action of chloroform upon the heart has not, in the opinion of rival experts, yet been demonstrated. It would seem that complex cross-circulation experiments are so open to sources of fallacy and their tracings so liable to conflicting interpretations that as guides to practice their value is not very great. It is not possible to feel that, at present, Surgeon-Lieutenant-Colonel Lawrie has proved by experiment the truth of his thesis that chloroform is perfectly safe when the respiration alone is watched. We have, therefore, for the time being to fall back on the teachings of clinical experience. The opinion of the majority of expert anæsthetists who spoke was that the respiration alone is an imperfect guide to the condition of a patient under chloroform, and we were advised to watch the pupil, the pulse, and the patient as a whole. It certainly seems probable that if we watch the respiration alone we are in danger of pushing the chloroform to the point of respiratory narcosis; and since this will come on gradually we may not recognise the condition till the patient is in a state of extreme danger. It is all very fine to say that the patient can always be brought round by artificial respiration; this, involving as it does the stopping of the operation in many cases, is a most inconvenient and alarming complication and should never be allowed to occur. In my view any interference with the respiratory centre by chloroform, however slight, is a sign of dangerous overdosing. Again, if respiration alone be watched, how is the beginner—experts even were once beginners—to distinguish between the shallow and irregular respiration of reflex inhibition, which so often precedes vomiting, and the insidious onset of respiratory narcosis? Some other danger signal is required. The pulse? I think that if chloroform be pushed to the point of affecting the pulse, if this be possible, a dangerous overdose has again been given. The heart, too, is liable to reflex inhibitions, and often becomes irregular and depressed during vomiting and also during the violent irritation of the sympathetic system met with in abdominal operations, in either case quite independently of the anæsthetic. Therefore, as an indication of the degree of the chloroform narcosis, I think the pulse is unreliable.

We require some indication which shall tell us when the cerebrum is completely narcotised, and shall also warn us when we are in danger of affecting the respiratory centre. This indication is found in the pupil. The third nerve centre, which governs it, is the first of the automatic centres of which we can have cognisance; it is not a vital centre, like the respiratory, and its narcosis is not in itself followed by dangerous complications. I regard the pupil, which is the visible sign of the condition of this centre, as the danger-signal for which we are looking. I find that the pupil has a regular cycle as the patient goes under. It is first dilated and active, it then becomes contracted, and lastly it becomes dilated and fixed. The first state is a sign of imperfect narcosis, the second of complete and safe narcosis, and the third of danger from imminent narcosis of the respiratory centre. The cause of this cycle is, I suggest, as follows. In imperfect narcosis, going under or coming round, the pupil is dilated and active; dilated because impulses, mental, sensory, or sympathetic, affect the half-narcotised cerebrum, and cause reflex inhibition of the third nerve centre; and active because the centre itself has not been reached by the anæsthetic. A similar dilatation is produced under ordinary conditions by fright, pain, or a blow on the abdomen. As narcosis deepens the pupil contracts because the cerebrum is now completely under, all cerebral reflexes are barred, and the third nerve centre is consequently unimpeded in its action. A similar state is seen in deep sleep. If the narcosis be pushed further the pupil will slowly dilate and become less and less active to light till it is widely dilated and fixed, because the narcosis